EARNINGS

GM profits drop 23%; cost-cutting speeded

By Michelle Krebs
AUTOMOTIVE NEWS STAFF REPORTER

DETROIT — General Motors, in announcing lower first-quarter sales and profits, said it is speeding up its cost-cutting efforts.

GM reported first-quarter earnings of $922 million, down 23 percent from $1.2 billion in the first quarter of 1986.

GM earnings were considerably higher than auto analysts had projected. The consensus of analysts surveyed by Automotive News was that GM earnings would be $770 million. The quarter marked the first time since 1983 that GM earned less than $1 billion in the first quarter.

On a per-share basis, GM earnings amounted to $2.62 a share compared with $3.52 in the year-earlier quarter.

Operating income dropped about 50 percent, to $687 million from $1.4 billion.

GM sales in the first quarter totaled $26.1 billion, down 3 percent from $26.8 billion in the first quarter of 1986. Earnings as a percent of sales fell to 3.5 percent in the quarter from 4.5 percent a year ago.

GM Chairman Roger B. Smith and President F. James McDonald said in the company's earnings statement that GM is accelerating its programs to reduce staff expense, phase out uncompetitive or obsolete component manufacturing operations and improve manufacturing and assembly plant efficiencies.

A GM spokesman said the company will try to accomplish the cost-cutting efforts it already has set in motion before the previously set target dates.

GM has said it will close nine assembly and stamping plants and portions of two others and will cut its salaried workforce 25 percent by 1989. The automaker also has announced the closing or sale of some component operations and more are expected to be named in the next six to nine months. GM also has promised to cut expenses by $10 billion by 1989.

GM executives have said they have determined that component operations amounting to about 10 percent of overall component sales are not competitive and have little chance of becoming competitive, so they will be closed or sold.

Smith and McDonald noted that the rise of the Japanese yen against the U.S. dollar has caused the Japanese to concentrate on cost cutting. "We must respond to the challenge by continuing to design and build attractive, quality cars — and do so at the lowest possible price," they said.

During the quarter, GM's worldwide factory sales to dealers totaled 2,093,000 vehicles, down 10 percent from the first three months of 1986. GM attributed the sales drop to strong competition, which prompted GM to cut North American production in order to reduce inventories. During the quarter, GM also offered sales-incentive programs that adversely affected results.

In addition, GM said the start-up operations at five North American car and truck assembly plants adversely affected first-quarter performance.

GM said earnings were favorably impacted by "efficiencies generated by cost improvement programs" and record earnings from General Motors Acceptance Corp.

GM's earnings statement, however, showed that total costs and expenses for the quarter remained at the same level as in the first quarter of 1986. However, the average number of employees dropped to 847,000 from 901,000.

GM also had a lower tax bill. This year, GM paid $71.9 million in income taxes compared with $475.2 million in the first quarter of 1986. GM said it will receive a $900 million tax refund in 1987.

GM's working capital position improved, but it apparently was because of a loan from GMAC. On March 31, GM's working capital amounted to $7.4 billion compared with $3.9 billion on Dec. 31, 1986. During the quarter, GM borrowed $3.4 billion from GMAC under a five-year agreement whereby GMAC will loan up to $12 billion to its parent company. To date, GM has borrowed $8.6 billion of the $12 billion.

GMAC also paid its parent a $300 million dividend on March 31. GM previously said that GMAC will pay nearly $1 billion in dividends to its parent company during 1987 after paying no dividend to GM in 1986 despite record earnings. Historically, GMAC has paid about half of its earnings to GM as a dividend.

GMAC earned $481 million in the first quarter, a 74 percent increase over 1986 first-quarter profits of $277 million. It was GMAC's best quarter ever. GMAC's earnings included $68 million resulting from a change in depreciation accounting.

GMAC Chairman John R. Edman attributed the finance subsidiary's record profits to lower borrowing costs and a higher level of average earning assets. Short-term borrowing costs for the first quarter amounted to 6.18 percent, down from 7.84 percent for the comparable 1986 period.

GMAC financed 540,000 new cars and trucks in the United States, or about 44 percent of the vehicles sold by GM's U.S. dealers. It also financed 106,000 vehicles outside of the United States.

In the first quarter of 1986, GMAC financed 793,000 vehicles in the United States, or about 53 percent of vehicles sold by GM dealers. A wide range of incentives during the first quarter of 1986 resulted in the highest volume of vehicles financed by GMAC in a first quarter.

The dollar volume of GMAC's retail-vehicle financing totaled $8.8 billion, down from $12.2 billion in the first quarter of 1986 when more special-rate finance programs were in effect.

Total finance receivables outstanding as of March 31 totaled $81.9 billion, compared with $81.8 billion on March 31, 1986. Retail and lease financing receivables totaled $65.3 billion, and wholesale receivables, primarily dealer inventory financing, amounted to $12.6 billion.

GM's computer subsidiary, Electronic Data Systems Corp., reported net income of $65 million in the first quarter, up 16 percent from the $56 million earned in the year-earlier period.

On a per-share basis, EDS made 53 cents in the first quarter compared with 46 cents in the year-ago quarter.

Quarterly revenues increased 4 percent to $1.04 billion from $997 million in the first quarter of 1986. Of the total, sales to GM dipped 2 percent to $720 million in the first quarter compared with $736 million in the first quarter of 1986.

GM Hughes Electronics Corp. reported net income of $138 million for the first quarter. That compares with $116 million in the same quarter a year ago on a restated basis. GMHE also restated earnings to reflect a new accounting procedure for pensions. Net income for the first quarter of 1986 was $100 million before being re-stated.

Earnings without items associated with GM's purchase of Hughes Aircraft Co., including goodwill payments to Hughes, totaled $175 million, up 14 percent from $153 million. Dividend payouts for Class H stock is based upon earnings excluding those items.

Earnings per share were the subsidiary's best for any quarter at 88 cents for the first quarter, compared with 77 cents in the year-ago period.

GMHE sales amounted to $2.7 billion, up 4 percent from $2.6 billion a year ago. Sales to GM and its affiliates totaled $873 million in the first quarter compared with $802 million in the same period last year.

AMC is on a roll; posts 2nd profitable quarter

By Michelle Krebs
AUTOMOTIVE NEWS STAFF REPORTER

DETROIT — American Motors, on the verge of being acquired by Chrysler Corp., reported its best first quarter since 1979 with a profit of $23.4 million on sales of $1.1 billion.

That compares with a loss of $18.9 million on sales of $918 million in the first quarter of 1986. AMC earned 12 cents per share, compared with a loss of 20 cents per share or the year-earlier period.

The first-quarter profit followed a $20.0 million profit in the fourth quarter of 1986. The back-to-back quarterly profits were the first since 1984 when profits were significantly less than in the past two quarters.

The 1987 period resulted in AMC's best first-quarter earnings since 1979 when it earned $32.0 million. It was the best-ever first quarter in terms of sales, with $1.1 billion.

AMC President Joseph E. Cappy said the company's improved performance was due to increased Jeep sales, a strengthened passenger-car line with the introduction of the Renault Medallion in March, improved operating margins and the continuation of improved manufacturing efficiencies.

He noted that the profit was achieved despite start-up costs associated with the new Bramalea, Ontario, assembly plant, where AMC will produce the intermediate-sized Premier, and provisions for employee profit sharing during the quarter.

North American vehicle sales totaled 77,012 for the first quarter, compared with 70,173 for the year-earlier period. They included 18,380 car sales and 58,632 Jeep sales this year. That compares with 17,011 car sales and 53,162 Jeep sales in the year-ago quarter.

Outside North America, AMC sold 5,927 vehicles, down from 7,249 in the first quarter of 1986. AMC sold 190 cars and 5,737 Jeeps outside North America during the quarter. That compares with 1,601 cars and 5,648 Jeeps in the year-ago quarter.

Honda blames yen gain as profits plunge 43%

TOKYO — Honda Motor Co. Ltd. reported a 43 percent drop in earnings for the fiscal year ended Feb. 28 because of the strengthening Japanese yen.

Honda said net income for the fiscal year amounted to $547 million, down 43 percent from the previous fiscal year. Sales totaled $18.7 billion, down 1 percent.

Honda said sales in its home market were up 7 percent because of an increase in sales of cars and parts and other revenues. The company said that its overseas subsidiaries had increased sales in their local currencies, but overseas revenue dropped because of the strengthening Japanese yen.

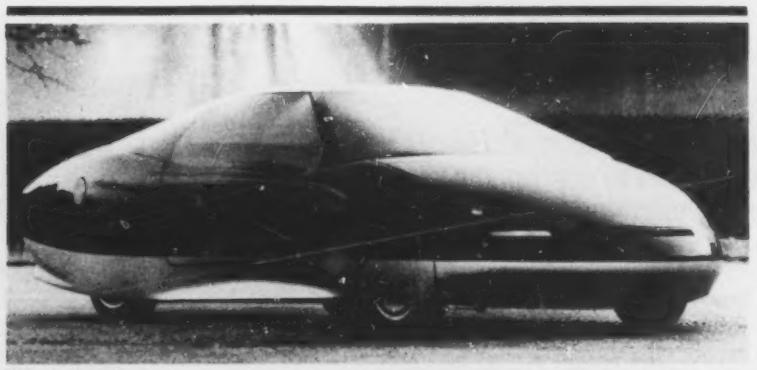
By product segment, Honda said car sales were $13.1 billion, up 9 percent, mainly because of stronger Japanese sales and a restructuring of the Japanese dealer network. U.S. sales increased with the expansion of local production capacity and a sustained demand for Honda cars, Honda said. Car sales in Europe also rose.

Motorcycle sales amounted to $2.0 billion, down 27 percent, because of sales declines in overseas markets, especially North America. Sales of power products totaled $1.1 billion, down 35 percent. Honda said power-product sales increased in Japan but declined overseas because of lower sales of all-terrain vehicles. Parts sales and other revenue totaled $2.6 billion, the same as the previous year.

Of total sales revenue, 69.7 percent came from automobiles, up 6.4 percent; 10.5 percent came from motorcycles, down 3.7 percent; 5.7 percent came from power products, down 2.9 percent; and 14.1 percent came from parts and other sources, the same as last year.

For the fourth fiscal quarter, Honda reported net income of $132 million, down 33 percent from the year-earlier fourth quarter. Sales totaled $5.0 billion, up 3 percent.

By product segment for the quarter, Honda had car sales of $3.7 billion, down 15 percent; motorcycle sales totaled $348 million, down 34 percent; sales of power products amounted to $347 million, down 20 percent; and sales of parts and other revenue were $643 million, up 1 percent.



Wind cheater
Chevrolet says its Aero 2003A research vehicle has the lowest coefficient of drag (0.166) of any driveable vehicle in the world. The vehicle has wheel skirts, a hydraulic height-adjustment system, hidden wipers, peripheral inside mirrors and a smooth underbody. The engine is a 2.8-liter 60-degree transversely mounted V-6 with electronic fuel injection. A low-profile radiator that receives air through a large duct in the nose panel helps to lower Aero 2003A's nose.

Mid-April sales up 3%

Sales of new cars built in the United States perked up a bit in mid-April. There was also an improvement in the daily selling rate.

Sales of the eight companies now selling U.S.-made cars totaled 201,141 units for April 11-20, up 3.80 percent from 193,772 last year.

The daily selling rate climbed from that of the preceding 10-day period, although it trailed the rate for March.

The mid-April rate rose to 25,143 cars a day from 21,460 for the first 10 days of this month and 24,222 for April 11-20 last year. The daily selling rate was 26,235 for all of March and 24,215 for all of February, according to an Automotive News analysis.

In mid-April, Nissan dealers delivered a robust 206.99 percent more cars than they did a year earlier. Honda's sales were up 77.75 percent and Ford Motor Co.'s rose 28.69 percent.

Losers in the period were American Motors with a drop of 55.31 percent from last year; Volkswagen with a decline of 30.66 percent; Chrysler Motors with a fall-off of 6.92 percent; and General Motors with a dip of 7.83 percent.

— Roger Rowand

DOMESTIC SALES

	Apr.11-20, 1987	Apr.11-20, 1986
Renault		
Alliance-Encore	570†	1,350†
AMC	145†	250†
American Motors	715	1,600
Chrysler	6,584	8,921
Plymouth	8,423	6,747
Dodge	9,067	10,196
Chrysler Motors	24,074	25,884
Ford	43,626	31,883
Mercury	11,987	11,113
Lincoln	4,303	3,561
Ford Motor Co.	59,916	46,557
Buick	15,467	18,502
Cadillac	8,528	7,130
Chevrolet	38,899	39,798
Oldsmobile	20,721	26,610
Pontiac	20,864	21,320
General Motors	104,479	113,360
Volkswagen	1,167	1,683
Honda	5,488	3,650
Nissan	3,248	1,058
Toyota	1,054	0
U.S. Industry Total	201,141	193,772

†—Estimate

FEATURES

"The Letter"

Invitation elicits anger from fleet managers, apology from Runzheimer International

By Geoff Sundstrom

Professional fleet managers will be trading opinions on a number of controversial topics at NAFA's annual conference this week. But nothing is expected to top the controversy over "the letter."

"The letter" was a promotional mailing sent to the chief executive officers of numerous fleet managers by Runzheimer International, Rochester, Wis.

According to NAFA's December newsletter, the Runzheimer letter "invited CEOs to a seminar designed to show 'a few ways to put your company cars on a sound financial footing.' "

The Runzheimer letter said: "Please don't send your fleet manager. Send someone with your authority or come yourself. Only you are equipped to make the kinds of decisions that can solve your fleet problems."

Runzheimer sells research and services to companies who reimburse drivers of employee-owned vehicles. The firm's newsletter for fleet managers, *Runzheimer Reports on Transportation*, is widely read in the industry.

The letter sent shock-waves through NAFA's membership when it was distributed late last year. NAFA was established, in part, to heighten the professional image and management skills of fleet administrators.

Said NAFA president Helen Bland: "I was very upset, because I got one of the letters. It went to our CEO, and he just sent it down to me."

Bland continued: "Not only was I upset, but there were many dozens and dozens of fleet managers whose CEOs got the letter. I wrote a letter on my own behalf to the gentleman who wrote that letter, and told him that not only was I upset, but that I had received a lot of calls from our NAFA members.

> "Boy, the troops were really upset. They wanted a letter of apology from Runzheimer published, so that our people would know we had taken issue with what they had said.
>
> They gave us the letter of apology, which we published in the newsletter."
>
> **— Helen Bland, 1986 NAFA President**

"My feeling was, if fleet managers meant nothing to them, then we would stop doing all their surveys. I thought they owed us an apology for that," Bland said.

She said a Runzheimer executive phoned her with an explanation. Shortly after, the NAFA board met.

Said Bland: "Boy, the troops were really upset. They wanted a letter of apology from Runzheimer published, so that our people would know we had taken issue with what they had said. They gave us the letter of apology, which we published in the newsletter.

"The only thing we didn't do — and I think it took care of itself — was to insist that they also send letters (of apology) to our CEOs also," Bland said.

According to Bland, "Runzheimer said it was a poor choice of words. But it was more than a poor choice of words. They said it was done by a marketing person. Regardless of who it was, it was a terrible thing to say. Even if they didn't think we were knowledgeable or could make decisions — to make a statement like that and send it to our CEOs, who all sent it right to their fleet managers, was a complete insult."

Bland added, "I think they realized their mistake. A lot of the information they have in their own book that they publish for $400 came from NAFA members. No NAFA members are going to give them that information if they are going to say we don't have any decision-making power in our companies."

According to Bland, "I said to them in my letter: You know you are a member of NAFA. We assumed all these years that you supported NAFA membership, and obviously you don't."

Runzheimer's apology, signed by Runzheimer president Gaylord F. Milbrandt, read in part: "It is unfortunate that we carelessly allowed one of our letters (encouraging CEOs to attend a seminar) to contain an injudicious reference to fleet managers. Believe me that our poor choice of words was unintentional.

"Helen Bland, your NAFA president, has passed along some of the concern expressed by some, and that will certainly cause us to be more careful and sensitive in the future. I hope this will only be a temporary annoyance and not damage our long-term relationship with NAFA and its members."

The apology concludes, "In sum — we feel badly; we apologize; and we hope you will forgive us. You can rest assured we will continue to professionally and financially support the NAFA organization." ■

Runzheimer predicts minimal rise in gas price

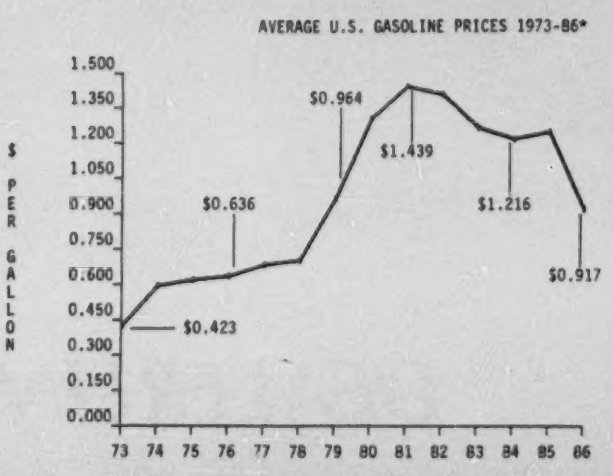
If 1987 is a relatively "normal" year, the editors of *Runzheimer Reports on Transportation* predict that "the U.S. average price per gallon of gasoline will not increase more than 5 cents above the February average of 90.5 cents per gallon (self-serve unleaded regular), and may even drop."

Runzheimer defines "normal" as a year that does not witness "flashpoints — those accidental junctures in time when rising demand for petroleum strikes against flinty and unyielding international political events to spark frenzy, fright and economic upheaval."

Further regarding gasoline prices, Runzheimer states:

"Whether OPEC can come to terms with itself in 1987 will have limited effect on the U.S. average per gallon price of gasoline for the rest of the year. There is still a great deal of excess gasoline in storage to be 'eaten up,' and no shortages are predicted for this year.

"Also, as our analysis of gasoline prices demonstrated, the maximum year-to-year increase outside of the flashpoints is less than 5 cents per gallon."



*NOTE--PRICES FROM 1973-82 WERE FULL-SERVE UNLEADED AND FROM 1983-86 WERE SELF-SERVE UNLEADED. ALL PRICES WERE EFFECTIVE ON JULY 1.

But Runzheimer also cautions that "the key to fuel-price changes is largely the ability of OPEC members to adhere to to their output ceiling. That remains to be seen." (See the accompanying graph.)

Regarding automobile insurance rates, Runzheimer says "the crisis has peaked and insurance coverage is becoming more available to fleets."

Runzheimer's editors recommend that "fleet managers should not halt the efforts they've made in the past several years with safety and risk management programs.

"A well-designed safety program, besides saving lives, represents a way to enhance respectability and professionalism of the fleet-management position within an organization."

Runzheimer quotes the Insurance Service Office as saying that "statistics show that the dollar-loss ratio for insurance companies has diminished in the past two years. In 1985 the insurance industry lost $1.165 for every dollar of income taken. In the first nine months of 1986, the loss ratio was $1.08 for every dollar. In 1987, we predict that figure will drop to about $1.05 per dollar.

"There are more available insurance companies willing to insure fleets than there have been for the past two years."

In a third area, Runzheimer notes that "each model year brings new automotive innovations to U.S. consumers. In recent years we've witnessed port-fuel-injectors that practically make carburetors obsolete, while computers have taken over a vehicle's transmission and ignition systems.

"The 1987 model year has brought us two more advancements in automotive technology: anti-lock braking systems (ABS); and all-wheel drive."

ABS is one of the newest safety features offered on 1987 models. The system is designed to provide directional stability during severe braking, regardless of the cargo weight. A modulated reduction in rear brake-line pressure inhibits rear-wheel lockup under most braking conditions.

The all-wheel-drive system is designed to provide better traction under bad driving conditions. This option is a part-time four-wheel-drive and is not intended for off-road use. It is for use in inclement weather areas, especially in the north.

For 1987, it is available in certain Subaru models, the Toyota Tercel, the Mercury Topaz and Ford Tempo. ■

FEATURES

Show us where it Hertz

Los Angeles, San Francisco and New York once again are the most expensive cities in which to operate a car, according to Hertz Corp.

Costs to own and run typical 1986 compact cars in 20 top U.S. cities edged up an average of about 1 cent a mile — under 2 percent — to a record 52.53 cents from 1985's 51.59 cents, according to Hertz Corp.'s latest annual survey.

Expenses varied by 16.68 cents a mile among the 20 cities, with Los Angeles, San Francisco and New York City ranking one-two-three for the seventh straight year, the report said.

Some 17 of the 20 major geographically spread areas reflected increases in 1986, ranging from 0.2 cents per mile in Cleveland to 2.96 cents in Miami, according to the car-rental company. Only Cincinnati, Houston and St. Louis fell.

The rise in the big cities' average compares with a jump of 1.8 percent, or 0.8 cents a mile, in the 1986 overall 48.48 cents national average.

Auto expenses in large cities are normally higher than in small towns, or in suburban and rural areas, the firm noted.

Los Angeles again led the nation with outlays estimated at 63.25 cents a mile, up 0.5 cents from 1985. San Francisco remained second, at 63.17 cents. New York City again was third, rising 1.89 cents to 62.03 cents.

Milwaukee remained in last place at 46.57 cents a mile. St. Louis fell from seventh to ninth, dropping 1.83 cents to 51.58 cents. Atlanta surged 2.41 cents to eighth place, at 51.62 cents, from 11th in '85. Miami climbed 2.96 cents to fourth spot, at 58.01 cents, from fifth the previous year. Detroit rose 2.05 cents to 50.47 cents — from 14th to 10th.

The study showed advances in vehicle sticker prices, which affect depreciation, plus increases in insurance, licenses, fees, taxes and upkeep. These offset lower car-loan interest rates and gasoline prices.

See table 1 for 1986 and 1985 cent-per-mile costs and city rankings.

Hertz estimates are for normally equipped vehicles purchased new and driven 10,000 miles a year for five years by average new-car-buying families — including two parents and one youthful, inexperienced male driver.

Purchase price averages in 1986 ranged from a low of $10,244 in Detroit to $10,663 in New York.

The category of insurance, licensing and fees ranged from 10.87 cents a mile in Milwaukee to 27.66 cents in Los Angeles.

Estimated interest varied from 6.69 cents in Washington to 8.67 cents in New York.

Maintenance and repair ranged from 4.30 cents in Cincinnati to 6.58 cents in San Francisco.

Fuel and other service-station charges went from 5.76 cents in Cincinnati to 8.11 cents in San Francisco and Seattle.

See table 2 for Hertz' estimated 20-city averages by cost category for typical new 1986 and 1985 compacts.

Hertz noted that in the past 14 years, auto purchase prices went up 238 percent, and ownership and operating charges for comparable models comparably driven rose 200 percent, while inflation was 162 percent.

To reduce running expenses, motorists have been buying smaller models with fewer options, keeping their cars longer and driving them less, figures in the latest Hertz report show. Holding cars 10 years, rather than one, normally saves more than one-third in yearly ownership costs, for example.

Over the past 14 years of expense increases since 1972, average vehicle mileage dropped 14 percent, vehicle age rose 29 percent, and most typical new models now are about 1,000 pounds lighter and a foot shorter.

Estimated 29-city averages for other '86 models, also bought new and to be driven 10,000 miles a year for five years, were:

- **Subcompacts:** 43.80 cents a mile, off 1.2 percent from 44.32 cents in 1985.
- **Mid-size units:** 60.82 cents, up 19.1 percent from 51.06 cents in 1985.
- **Intermediates:** 59.21 cents, up 3.5 percent from 57.21 cents.
- **Standard-size:** 68.24 cents, about even with 1985's 68.20 cents.

Higher annual mileage lowers typical per-mile costs, but raises total annual spending; lower yearly mileage reverses this process.

Hertz estimates 1986 personal passenger-car mileage averaged 8,894 annually for all units, and was 10,520 yearly during a new car's first five years. ■

TABLE 1: CENT-PER-MILE COSTS AND CITY RANKINGS

RANK	CITY	1986	RANK	1985	RANK	CITY	1986	RANK	1985
1.	Los Angeles	63.15¢	1.	62.69¢	11.	Boston	50.32¢	10.	49.43¢
2.	San Francisco	63.17	2.	62.66	12.	Houston	50.13	8.	50.72
3.	New York City	62.03	3.	60.14	13.	Minneapolis	49.76	12.	48.85
4.	Miami	58.01	5.	55.05	14.	San Diego	49.58	13.	48.83
5.	Denver	57.41	4.	55.56	15.	Dallas	48.65	18.	46.96
6.	Chicago	55.35	6.	54.53		NATIONAL AVERAGE	48.48		47.64
7.	Seattle	52.60	9.	50.48	16.	Pittsburgh	47.85	15.	47.53
20	-CITY AVERAGE	52.53		51.59	17.	Cleveland	47.75	16.	47.48
8.	Atlanta	51.62	11.	49.21	18.	District of Columbia	47.35	19.	46.75
9.	St. Louis	51.58	7.	53.41	19.	Cincinnati	47.21	17.	47.48
10.	Detroit	50.47	14.	48.42	20.	Milwaukee	46.57	20.	46.26

TABLE 2: 20-CITY AVERAGE COSTS

1986	EXPENSE CATEGORY	1985	% Change
$10,435	Purchase Price, including tax (reflected in depreciation)	$9,847	+ 5.97
16.59¢	Depreciation	15.66¢	+ 5.94
16.54¢	Insurance, Licenses & Fees	15.09¢	+ 9.62
7.53¢	Interest Paid & Lost	8.54¢	−11.83
5.06¢	Maintenance & Repairs	4.57¢	+10.70
6.81¢	Gasoline & Other Service Station Charges	7.74¢	−12.02
52.53¢	TOTAL	51.59¢	+ 1.82

Hose Explosion

Car design, emission laws and space limitations all have contributed to the increase in hoses

Fleet service technicians know this as well as anyone: Rubber hoses are becoming as abundant on new cars as woofers, tweeters and computer chips.

Today's automobiles are draping their frames with an average of 16 rubber hoses per vehicle compared with four to five just 10 years ago.

"There are approximately 20 feet of hose on a new car," says Ron Maltarich, marketing manager for automotive belts and hoses at Goodyear Tire & Rubber Co.

"A new car in 1977 had an upper and lower radiator hose, heater hose and a fuel-line hose," Maltarich says.

"If someone ordered air-conditioning and power steering, those options added more hoses, but that was basically it."

But as cars have motored into the age of clean environment, they have seemingly added a hose instead of a candle for each year.

Increased awareness of the driver to aerodynamics and styling, new laws governing emission controls and space limitations have all contributed to the increase in the number of hoses.

"Even heater hose has become more sophisticated," Maltarich says. "What used to be a straight hose is now a molded-curved hose."

Indeed, the four- to five-hose car has gradually evolved into a machine resembling the human vein and artery network.

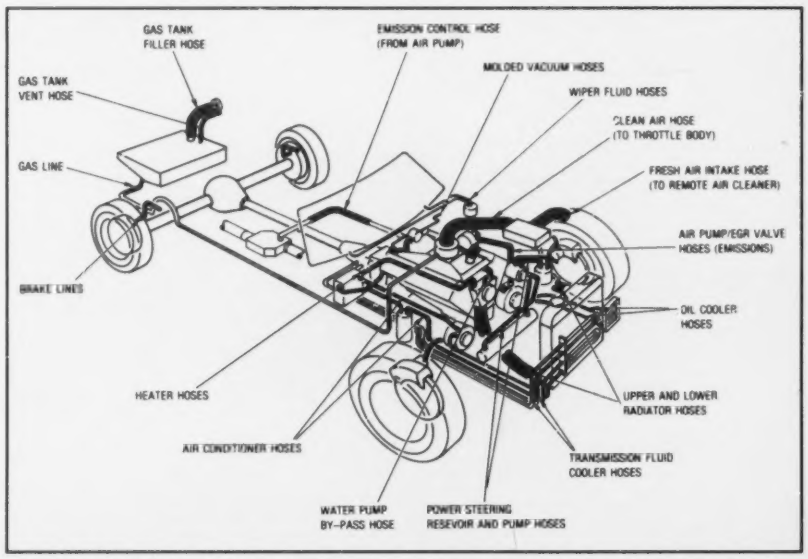
Besides the radiator, heater and fuel line hoses, today's new car might contain hoses for air management systems (emissions), fuel systems (fuel fill and fuel vent), clean-air duct, force-fed cold air, brakes, power steering and air conditioner (freon).

While federal legislation sped the evolution of some of the hose, aerodynamics and styling demanded the others.

"Because car bodies are designed more for aerodynamics and style, engine compartments are smaller," Maltarich says. "Subsequently, hoses must fit the engine curvature more closely."

Drivers also are realizing that air cleaners aren't on top of their engine any more.

"Many parts are in remote locations. These reservoirs still must be connected to the engine, and that means hoses," Maltarich says.


GAS TANK FILLER HOSE
EMISSION CONTROL HOSE (FROM AIR PUMP)
MOLDED VACUUM HOSES
GAS TANK VENT HOSE
WIPER FLUID HOSES
CLEAN AIR HOSE (TO THROTTLE BODY)
GAS LINE
FRESH AIR INTAKE HOSE (TO REMOTE AIR CLEANER)
AIR PUMP/EGR VALVE HOSES (EMISSIONS)
BRAKE LINES
OIL COOLER HOSES
HEATER HOSES
UPPER AND LOWER RADIATOR HOSES
AIR CONDITIONER HOSES
TRANSMISSION FLUID COOLER HOSES
WATER PUMP BY-PASS HOSE
POWER STEERING RESEVOIR AND PUMP HOSES

There are about 20 feet of hose on an average new car compared to five feet just 10 years ago.

While the average motorist — and fleet service technician — may have nightmares about the increasing number of hoses on cars, Maltarich says there's good news, too.

He points out: "We're making hoses that last a lot longer now. And we're so confident in our product that, for most applications, our hoses and belts should last the lifetime of the vehicle." ■

FEATURES

THE BIG SQUEEZE

Owning and operating a car gets tighter in 1986, as the cost for compacts rises to 48.48 cents per mile

Despite plunging gasoline prices and loan interest rates, 1986 auto ownership and operating expenses rose for the 13th year in the past 14, as typical compact models hit a record 48.48 cents a mile, up 1.8 percent or 0.8 cents from 1985's 47.64 cents.

This is according to Hertz Corp.'s latest annual estimates.

Since 1972, the last year before the first Arab oil embargo, outlays to own and run typical U.S. cars tripled, dropping 5.2 percent only in 1983.

By contrast, the nation's overall living costs climbed 162 percent in the same 14-year period, the rental-car company's report noted.

The survey lists 1986 increases in insurance, licenses, taxes, fees, maintenance, repairs and depreciation — the difference between car purchase price and resale value. These offset slight service-station and loan-cost declines. (Parking and tolls are excluded from the study's costs.)

Typical 1986 compact car purchase prices shot up nearly 6.2 percent to $10,439 from 1985's $9,834. Purchase price increases can boost depreciation, loan, tax and insurance outlays, the study points out.

The 1986 figure of 48.48 cents a mile is for a normally equipped compact make, bought new and driven 10,000 miles annually for five years — typical U.S. new-car driving.

Table 1 is a breakout of costs for compact cars purchased new and driven 10,000 miles a year for five years — in 1986 and 1985.

Automotive expenses differ significantly by vehicle size. optional equipment, annual mileage, ownership duration and where autos are driven.

In the report, mid-size models showed the sharpest advance, rising 19 percent to 56.13 cents a mile from 47.15 cents in 1985.

Standard-size autos stayed virtually even at 62.98 cents a mile, 56 percent above the subcompact's estimated cost, which fell 1.3 percent to 40.42 from 40.92 cents a mile.

Table 2 shows Hertz' recent per-mile cost estimates for different-sized cars bought new and driven 10,000 miles annually for five years.

New 1986 compacts driven 10,000 miles a year, but traded annually, cost 58.99 cents a mile, while those run 10,000 miles a year, for 10 years, averaged 37.71 cents a mile, some 21.28 cents under costs for annual trading, saving $21,280 over a car's 10-year, 100,000-mile lifespan, Hertz' study shows.

Table 3 is a breakdown of the yearly cost differences.

Also, used cars cost some 40 percent less than ones bought new.

Hertz data indicate that some three-quarters of all auto outlays for typical driving are in so-called "fixed" or "standing" expenses such as depreciation, interest, insurance, licenses, taxes and fees. These are largely influenced by the car's purchase price and how long the vehicle is driven.

TABLE 2: HERTZ 1978-1986 COST ESTIMATES BY CAR SIZE

CAR SIZE	1986	1985	% Change '86-'85	1984	1983	1982	1978	% Change '78-'86
Subcompact	.4042	.4092	– 1.22	.3663	.3463	.3418	.2252	+.795
COMPACT	.4848	.4764	1.76	.4567	.4328	.4467	.2485	+.951
Mid-Size	.5613	.4715	19.04	.4861	.4546	.4902	.2873	+.954
Intermediate	.5464	.5283	4.61	.5019	.4956	.5009	.2891	+.890
Standard	.6298	.6297	—	.5977	.5542	.5231	.3233	+.948
5-Size Average	.5253	.5018	4.68	.4817	.4567	.4605	.2747	+.831

TABLE 3: YEARLY COST DIFFERENCES, COMPACT CARS

Year	1	2	3	4	5	6	7	8	9	10
Cents Per Mile	.5899	.5596	.5268	.5014	.4848	.4524	.4278	.4074	.3907	.3771

TABLE 1: COMPACT CAR COSTS

	1986	1985	% Change
Depreciation	0.1660	0.1564	1.0614
Insurance, Licensing, Fees	0.1328	0.1193	1.1132
Interest (P&L)	0.0748	0.0849	–0.0614
FIXED COSTS, SUBTOTAL	0.3736	0.3606	1.0361
Maintenance & Repair	0.0453	0.0430	1.0535
Gas, Other Service Station Charges	0.0659	0.0728	–0.0948
VARIABLE COSTS, SUBTOTAL	0.1112	0.1158	–0.0397
FIXED & VARIABLE TOTALS	0.4848	0.4764	1.0176

"Variable" or "running" costs — such as gasoline, oil, maintenance, repairs, parts and accessories — comprise the remaining 25 percent of the expenditures.

Trading (or selling) a car sooner raises the "fixed" to "variable" cost ratio to about four-fifths of total charges, while keeping one longer usually lowers it to roughly two-thirds.

The Hertz data report that from 1972 to 1983 motorists drove less, kept cars longer and bought smaller vehicles with fewer options, to keep driving outlays within family incomes:

- From 1972 to 1983, average yearly passenger-car mileage dropped 22 percent from 10,362 to 8,037 miles before turning upward to 8,317 in 1984, 8,586 miles in 1985 and 8,894 last year.
- Compact cars, rather than intermediates, are now the most typical new models purchased.
- New cars are now kept an average of 5.2 years.
- Average age of all cars is now 7.6 years versus 5.7 in 1972.

The report stresses that variations in annual driving distances also have a material effect on cents-per-mile costs because annual fixed-dollar outlays are divided by more, or fewer, miles.

For the five-year driver, a new 1986 compact's costs ranged from 85.05 cents a mile at 5,000 miles a year to 30.83 cents at an annual 20,000 miles of driving — 55.22 cents a mile less.

However, on an annual dollar basis, 5,000 miles a year total just $4,252, while 20,000 miles a year come to $6,165 — $1,913 a year more.

The average driving distance for U.S. passenger cars in their first five years of service was 10,520 miles in 1985, latest year for which there are mileage figures.

Driving expenses can vary so dramatically under such a wide array of circumstances that each motorist should figure his or her own outlays, Hertz said.

For example, parking and tolls can add 10 to 40 cents to the 48.48 cents a mile average in major cities, but can vary substantially, even for similar autos in the same city, if driving patterns are different. ■

Georgia lessors seek to outlaw vehicle subleasing

By Robert H. Brown

Vehicle lessors in Georgia — and especially Atlanta — are lobbying for legislation that would make it illegal to sublease a leased car without the dealers' permission.

A law such as the one in California looks good to Georgia lessors, who say they are being taken for a ride by those who attempt to sublease the cars they have leased.

As many as 1,000 cars may have been subleased by "middle men" since last summer, according to J. David Dunaway, president of the Georgia branch of the National Vehicle Leasing Association (NVLA).

Subleasing isn't illegal in Georgia, but may be a little on the shady side of the law.

On the other hand, California lawmakers have drafted new laws that would make it a crime to sublease cars.

Lessors in Georgia have approached legislators about the possibility of getting similar legislation, but say that will not happen until next year. The Georgia general assembly has already met for 1987, and unless a special session is called, nothing is likely to happen this year to put a damper on subleasing.

As an interim measure, Georgia dealers have gone to the state Attorney General's Office and Office of Consumer Affairs. The offices have been asked to do some investigating to see if the practice can be halted, or at least discouraged.

According to the NVLA, there have been instances where leased cars have been sold without the lessor's notice, or even the lessee's.

Much of what is believed to be happening in Atlanta may have stemmed from a suit filed in nearby Gwinnett County. Lessors are watching the case closely.

In the suit, a consumer charged a local firm had illegally arranged to sublease a 1986 Audi 5000S.

According to the suit, Gerald K. Hubler accused Global International Brokerage Inc. of "false representations" in that the company told Hubler no problems had "cropped up" as a result of marketing leased automobiles to third parties.

Further, the suit charges Global knew the agreement between Hubler and a Miami man was contrary to Hubler's original contract with First National Bank of Atlanta.

However, Global, through its attorney, said in a communication to the Office of Consumer Affairs, that no wrong was committed, and that Global operates in good faith.

Because of a great deal of promotion by dealers — both exclusive lessors and dealerships — leasing has become quite popular in the Atlanta market. NVLA's Dunaway estimates something like a quarter-million leased cars may be operating on Georgia highways.

The idea of leasing caught on with young professional people who did not want to tie up large sums of money in car ownership.

However, while leasing has been attractive to many, the monthly payments have been higher than many could afford, and so they want out.

In Atlanta, dealers say, there are a lot of people who would like to get out of leases, and they are providing a steady source of supply for subleasing companies and individuals.

Dunaway said there may be as many as 900 to 1,000 cases of subleasing deals consummated.

Atlanta leasing companies are attempting to alert their customers about the hazards of subleasing vehicles. Some dealers have sent out letters to that effect.

Meanwhile, NVLA members are asking customers to stay away from persons offering to help them get out of leases.

A number of cases have come to light where cars were subleased and the sublessor failed to make payments to the original lessor. Then the lessor starts looking for his car, only to find it has been subleased. ■

FEATURE

Most fleet managers favor higher speed limit set by states, NAFA survey reveals

By Geoff Sundstrom

A majority of fleet managers support higher speed limits, even though significant numbers still believe 55 mph is fast enough for the nation's highways.

According to an NAFA survey, 64 percent of NAFA members favor a higher speed limit set by the states, while 33.5 percent support a 55-mph national speed limit.

NAFA said 597 fleet managers, or 47 percent of the association's membership, responded to the study.

The speed-limit survey was conducted just prior to April's Congressional vote, granting states the right to set higher speed limits on rural interstate highways.

NAFA's board of trustees asked members for their views, as part of the association's move to become more active in legislation affecting the fleet industry.

Results of the survey were sent to key leaders of the Senate and House of Representatives and were shared with NHTSA, according to NAFA.

"Fleet managers are very concerned about vehicle safety," said NAFA executive director David Lefever, "so the association staff was surprised that a majority supported higher speeds."

However, he added: "Fleet managers seem to be saying that speed is less a cause of highway accidents than are other factors."

Lefever cited alcohol abuse and driver fatigue as other major causes of traffic accidents.

He said fleet managers who prefer allowing states to increase speed limits on certain roads offered comments such as:

"The 55-mph limit on wide-open, uncongested highways is too slow."

"Nearly everyone now goes 65 mph on the interstates. Why not raise the speed limit and enforce it?"

"The decrease in injury rates is attributable to new company policies on seat-belt use, defensive driving and safety awareness; it is not attributable to the 55-mph speed limit."

"If the limit is increased, it should be strictly enforced. Drivers should not be allowed to travel 1 mph above the posted limit."

Four lines of thought were most prevalent among fleet managers who support a top speed of 55 mph, according to NAFA. Those are:

- "Sales and service people exceed the posted speed limits already. An increase in the speed limit would increase their speed, probably from 70 mph to 75 or 80 mph. It's much more desirable to travel 15 mph over the 55 mph limit than 15 mph over a 65 mph limit."
- "Control of the speed limit prevents accidents. Too much speed results in less control."
- "The average driver is not capable of handling emergency situations at higher speeds."
- "The public can travel farther on a gallon of gas at 55 mph than at 65 mph. A higher limit will produce increased reliance on imports of foreign petroleum."

Two fleet managers favored no federal regulation of speeds at all.

One said, "Get the federal government out of our lives as much as we can."

The other said, "As a police officer, I feel the 55-mph limit should be abolished, because most drivers are not obeying it, and the varying speeds they travel are causing more accidents than high speeds are."

Fleet size did not make much difference in the opinions of fleet managers.

Fleet managers supporting the current nationwide speed limit averaged 1,069 vehicles in their fleet.

Those supporting state options in rural areas averaged 1,008 vehicles, while managers seeking an end to federal limits averaged 943 vehicles. ■

55 MPH SURVEY RESULTS

	RETAIN 55 MPH LIMIT ON ALL ROADWAYS	INCREASE LIMIT ON SOME ROADS	STATE TO SET LIMITS ON ITS ROADS
NUMBER OF FLEET MANAGERS IN FAVOR	202	258	137
PERCENT OF FLEET MANAGERS IN FAVOR	33.8	43.2	23
NUMBER OF LOCAL FLEETS IN FAVOR	47	62	50
NUMBER OF REGIONAL FLEETS IN FAVOR	23	41	16
NUMBER OF NATIONAL FLEETS IN FAVOR	132	155	71
TOTAL NUMBER OF VEHICLES IN FLEETS FAVORING	215,879	259,970	129,247
AVERAGE NUMBER OF VEHICLES IN FLEETS FAVORING	1,069	1,008	943

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American Motors

April 28 — Aptco Auto Auction, Taylor, Mich., and Statesville Auto Auction, Statesville, N.C.

April 29 — Columbus Fair Auto Auction, Columbus, Ohio, and Metro Milwaukee Auto Auction, Caledonia, Wis.

April 30 — Kansas City special A/J/R dealer-only sale, Kansas City, Mo.; Todd Auto Auction, Telford, Pa.; and Evansville Auto Auction, Evansville, Ind.

Chrysler Corp.

April 28 — American Auto Auction, Walpole, Mass.; Hatfield Auto Auction, Hatfield, Pa.; Arena Auto Auction, Chicago; Metro Milwaukee Auto Auction, Caledonia, Wis.; and Golden Gate Auto Auction, Fremont, Calif.

April 29 — Butler Auto Auction, Gibsonia, Pa.; Minneapolis Auto Auction, Plymouth, Minn.; and SW Auto Auction, Phoenix, Ariz.

April 30 — Clanton's Auto Auction, Darlington, S.C., and Northway Exchange Auto Auction, Clifton Park, N.Y.

Ford Motor Co.

April 28 — Harrisonburg Auto Auction, Harrisonburg, Va., and Indianapolis Auto Auction.

April 29 — Metro Auto Auction of Kansas City, Lee's Summit, Mo.; Minneapolis Northstar Auto Auction, Shakopee, Minn.; and Golden Gate Auto Auction, Fremont, Calif.

April 30 — Nashville Auto Auction, Nashville, Tenn.

General Motors

April 28 — Southern Auto Auction, East Windsor, Conn.; Dallas Auto Auction, Dallas; and 166 Auto Auction, Springfield, Mo.

April 29 — Atlanta Auto Auction, Red Oak, Ga.; Clanton's Auto Auction, Darlington, S.C.; and Omaha Auction, Omaha, Neb.

April 30 — Arena Auto Auction, Chicago; Ohio Auto Auction, Columbus, Ohio; and St. Louis Auto Auction, Bridgeton, Mo.

Used Car Sales
Auction Averages

April to date	$5,823
Month ago	$5,822
Year ago	$5,076

Model Breakdown
Auction Averages

	APR 1987	MAR 1987	FEB 1987
1987	$13,796	$13,443	$13,406
1986	$9,466	$9,609	$10,038
1985	$7,260	$7,305	$7,382
1984	$5,744	$5,825	$5,940
1983	$4,852	$4,860	$4,843
1982	$3,735	$3,755	$3,628
1981	$2,624	$2,643	$2,537
1980	$2,175	$2,155	$2,167
Overall Average	$5,823	$5,829	$5,711

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Reliant names new chief, seeks U.S. sales partner

By Richard Johnson
AUTOMOTIVE NEWS STAFF REPORTER

FRANKFURT, West Germany — Reliant Motor, the British specialty-car maker, has a new managing director and is seeking a North American partner to help distribute its open-top Scimitar two-seater in the United States.

Cyril Burton, a Reliant director since 1974, has been named managing director of the company, which produces the Michelotti-designed Scimitar and the Rialto three-wheeled vehicle. It also produces Ford RS200 rally cars on a contract basis.

Burton, who previously served as commercial and export director, replaces Ritchie Spencer, Reliant's managing director for the past 10 years. Spencer left to join GKN, a British engineering and industrial group and major auto industry supplier.

Spencer has said he was recruited by GKN and that his leaving was unrelated to conditions at Reliant, which has lost money for the past two years. He said Reliant has been operating profitably in recent months and reducing its debt load.

Michael Bennett, Reliant marketing director, said there are no plans to enter the North American market until the company finds a partner to share the expense of the project.

"Various people have expressed an interest," he said, "but we're insistent that it has to be a partnership interest. It is beyond the resources of this company to do the engineering and homologation work that is necessary. That is an enormous task for a company our size to undertake. We feel we have to have a greater commitment."

Though discussions have been under way, Bennett said no deal is imminent.

"We're not ready to toss a coin and say let's go," he said, adding that it is doubtful a partnership agreement can be concluded by the end of the year.

Spencer last year cited exchange rates and high product-liability insurance costs in the United States as reasons for delaying the planned launch of the Scimitar 1800Ti for the 1987 model year.

He said an annual insurance bill of more than $750,000 was difficult to justify in view of Reliant's projected annual U.S. volume of 500 units and estimated sale price of about $16,000. The Scimitar 1800Ti retails in Britain at 10,300 pounds, or $16,480 at current exchange rates.

Last year, Reliant sold about 2,500 Rialto three-wheelers — 2,350 in the United Kingdom and another 150 to export markets. Sales of the Rialto, introduced in 1982, have been steady in recent years, but are down from the early-1970s heyday for three-wheelers. Reliant sold 15,000 three-wheeled cars in 1972.

The Scimitar, Reliant's moderately priced sports car in the tradition of British Leyland's two-place Triumph and MG roadsters, suffered a sales decline in 1986. Reliant sold 277 Scimitars in the United Kingdom and another 55 to export markets. In 1985, following the car's debut in the fall of 1984, Reliant sold 547 Scimitars in the United Kingdom.

Sales fell off last year as customers sought more performance than was offered by versions powered by 1.6-liter Ford CVH engines, Bennett said.

The top-of-the-line 1800Ti turbocharged model, using Nissan's 1.8-liter Silvia Turbo engine, did not appear until last June, restricting 1986 volume, he said.

Reliant is now producing about 10 Scimitars a week at its factory in Tamworth, Staffordshire. It is counting on selling about 400 units in the United Kingdom this year and exporting another 150 to Japan, Germany, Switzerland and, beginning in May, to France. Reliant also sells a few cars in such locales as Hong Kong, where United Kingdom specifications apply.

Reliant reported an operating profit of $267,200 for the fiscal year ended Sept. 30, compared with a $486,400 loss before servicing debt the previous year. Overall, interest payments of $540,800 and a $4,800 tax debit in fiscal 1986 pulled the company $278,400 into the red, compared with a loss of $1.03 million after taxes in fiscal 1985. Reliant achieved a net profit in each of the three previous fiscal years.

The company registered a profit of $38,400, after interest payments, for the last six months of the 1986 fiscal year.

On the strength of the Rialto, Reliant sales revenue for the 1986 fiscal year increased slightly, to $22.9 million from $22.8 million.

The company also reduced its bank debt in 1986 by $1.4 million — to $3.2 million. Company officials have predicted a further decline this year.

The company's 1986 results also reflected an extraordinary debit of $483,200. That charge consisted of $724,800 in redundancy and reorganization costs, which were partially offset by a $241,600 profit from the sale of various properties.

LAMBO

FROM PAGE 1

Lamborghini factory here was watched by workers, local dignitaries and passing members of the public.

Repeated questions about the price paid by Chrysler were deflected, but the rumored figure is around $30 million. It is not known whether that figure includes the product and facility expansion plans sketched out by the new owners.

Technically, what Chrysler is buying is a Dutch-registered company, Micooperan BVH, through which the Franco-Swiss Mimrans had 100 percent control of Lamborghini.

The share capital of Lamborghini is 3.8 billion lire, or about $2.9 million at current exchange rates. Sales last year were 27 billion lire ($20.8 million), compared with 25 billion lire the previous year.

Lamborghini is said to have made a small profit last year and has been at about breakeven since Patrick, Jean-Claude and Robert Mimran bought the company seven years ago. But the Mimrans felt that a family company could not provide the financial commitment required to expand and develop the business. It needed a major company with proper financial muscle.

Initial contacts between Patrick Mimran and Greenwald took place in Detroit in November 1985. The proposal at that time was for Lamborghini and Chrysler to jointly develop a car that would be sold primarily in the United States by Chrysler.

The talks developed to the point at which Mimran offered to sell 40 percent of the stock in Lamborghini to Chrysler. But Chrysler wanted to hold a controlling majority.

As talks continued, news of the proposed sale leaked out earlier this year, although the precise details of the sale were not agreed upon until 2 a.m. last Thursday — a few hours before the official announcement.

Greenwald said the purchase will not affect Chrysler's relationship with Maserati, another famous manufacturer of sports cars, based in nearby Modena. Chrysler owns 15.6 percent of Maserati and has an option to increase that to 51 percent by 1995.

However, Greenwald said he did envisage Maserati producing some components for Lamborghini on a subcontract basis. In all other respects, the two companies will be run separately, he said.

Similarly, Chrysler will offer Lamborghini exchange of components, including electronics, and use of its test facilities and proving ground.

Indeed, Greenwald declared that day-to-day management at Lamborghini will be left entirely to the current staff, General Manager Emil Novaro and Managing Director Giulio Alfieri. The so-far-un-named Chrysler executive who will join Lamborghini's board will not be directly involved in the management of the company.

At present, Lamborghini employs 320 people. Last year, it made 270 cars but output this year will increase to about 450 vehicles — 220 Countachs, 70 Jalpas and 160 of the LM002 luxury off-roaders that went into production last year. The company recently began producing marine versions of its V-12 engine.

The highest annual volume it ever attained was 650 cars in the late 1970s.

But Italian sources said that Chrysler has earmarked Lamborghini for substantial expansion during the next five years, including annual volume as high as 5,000.

An important element of that will be a new model with a mid-mounted V-8 that will appear in three years. It is regarded as a likely replacement for the Jalpa, which it will resemble in size, specification and performance.

In addition, Greenwald said that the LM002 was a plus for Chrysler in the agreement. Unlike the Jalpa and Countach, the so-called Rambo Lambo has not so far been been approved for U.S. sale.

A replacement for the Countach is regarded as a lesser priority. Only 1,100 of the $127,000 high-speed two-seaters have been produced since it was introduced in 1974.

There is plenty of room for expansion of the Lamborghini facility. At present, only about one-fourth of the 947,000-square-foot site is covered by factory buildings.

Greenwald said that Lamborghinis will be sold in the United States through a combination of "the most qualified" Chrysler Motors dealers and other specialized-car dealers.

The 150 Lamborghinis sold in the United States last year were distributed by a privately owned company, Lamborghini East, headquartered in North Bergen, N.J.

Lamborghini East President Joe Nastasi said he bought the rights to distribute the cars east of the Mississippi River plus Texas in June 1985. Lamborghini East has dealers in Illinois, Maryland, New Jersey, Rhode Island, Pennsylvania, Florida, Texas and Puerto Rico.

Nastasi, who was out of the country last week, told Automotive News earlier this year that he plans to import 200 vehicles this year.

The issue of distribution rights on the West Coast is in litigation. Lamborghini West, headquartered in Beverly Hills, Calif., distributed cars in California and Arizona until the beginning of 1986.

The Lamborghini sports-car company was founded in 1963 by Ferruccio Lamborghini, an industrialist who established a successful agricultural-tractor-making business. He is said to have begun the sports-car concern after complaining about the quality and reliability of his Ferrari to Enzo Ferrari and being treated in an offhand manner.

Lamborghini was forced to sell the sports-car company after the tractor business got into difficulties in the early 1970s. The tractor business was eventually taken over by a Fiat company, but the sports-car operation had a number of difficult years under various managements in the late 1970s. That continued until some stability was introduced with the purchase by the Mimrans in 1980.

PATENT

FROM PAGE 1

of no challenges to date in the United States since a 4ws car has not been introduced. Both indicated that their respective companies will probably await the outcome of any disputes in Japan before taking up the fight here.

A spokesman for American Honda said the dispute in Japan has not affected the company's plans to market such a system in the United States on the 1988 model. No date has been set for introduction. The car was introduced earlier this month in Japan.

A Mazda spokesman said, "We expect to introduce it to the Japanese market this summer and later this fall in the United States." He added the situation in Japan has not changed those plans. The system will be offered as an option on the company's all-new 626 series.

Although Nissan and Toyota are actively pursuing 4ws technology, they have no immediate plans to offer it as an option on U.S. models.

In Japan, the five manufacturers involved in the dispute are seeking 4ws patents from the Japanese patent office. Some have hinted that additional complaints will be filed against others, charging infringements on their systems.

A Honda spokesman in Japan said the company applied for patents in several countries on Dec. 29, 1978 for two 4ws systems — a steer angle-dependent system and a speed-response system.

He said patents for the steer angle-dependent 4ws were granted to Honda by the United States on Oct. 20, 1982; Great Britain, June 15, 1983; West Germany, Nov. 22, 1984; France, May 24, 1985; and Japan, May 29, 1986.

The steer angle-dependent 4ws system is offered by Honda on its new Prelude Si and XX models that went on sale in Japan.

The Honda spokesman in Japan also said Honda was granted patents for the speed-response system by the United States on Feb. 2, 1982; Great Britain, June 15, 1983; and France, May 24, 1985.

According to that spokesman, Honda has not received patents for the second system from Japan and West Germany.

Toyota, Nissan and Mazda, in their complaint to the Japanese government, claimed that the speed-response system — on which Japan has not granted a patent — can be conceived by any automaker.

Although the automakers involved would not elaborate on their complaints against Honda, industry analysts said the speed-response 4ws system will become the industry norm in the future. Toyota, Nissan and Mazda, which have been developing their own systems, do not want Honda to have exclusive rights to the 4ws because Honda's patent applications covered a microcomputer-controlled version.

Since most automobile mechanisms can be controlled by a microcomputer, the three automakers apparently fear that if patents on the microcomputer-controlled 4ws are granted to Honda, their 4ws systems and various other control systems could infringe Honda's patents.

Mazda recently introduced its speed-sensing 4ws that electronically controls the steering direction and angle of the rear wheels in response to vehicle speeds.

Mazda said it has applied for more than 200 patents for the system, which will be featured on its new Capella (626) model to be introduced May 8 in Tokyo. A Capella-based car will be produced this fall by Mazda at its new assembly plant in Flat Rock, Mich.

Toyota said the 4ws concept was introduced on its FXV experimental model at the 1985 Tokyo Motor Show.

A Toyota spokesman said the company has applied for "quite a few patents" for the system with the Japanese patent office since 1985. He said the company also has filed infringement complaints but would not identify the companies named in the complaints.

Nissan claims it was the first to introduce 4ws, called HICAS (high capacity actively controlled suspension), on its Skyline model in August 1985. It also has applied for patents.

According to a Nissan spokesman, Mitsubishi has infringed on some features of its system, but he said that Nissan "has not decided what its is going to do about it."

The Nissan spokesman said Mitsubishi's system infringes in the areas of "steering sensitive efforts and picking up speed from the differential for rear-wheel steering."

Mitsubishi recently unveiled a 4ws system which, it said, integrates four-wheel-drive, four-wheel steering and four-wheel independent suspension systems. The system, MMC said, will be featured in its next-generation vehicles.

A Mitsubishi spokesman said the company was not filing any patent complaints against any auto companies "at this time."

Automotive News Staff Reporter Matt DeLorenzo in Washington contributed to this report.

CENSUS

FROM PAGE 1

U.S. FRANCHISES

	Apr. 1, 1987	Jan. 1, 1987
AMC-RENAULT		
AMC	1,300	1,309
Renault	1,250	1,258
CHRYSLER CORP.		
Chrysler	3,078	3,064
Dodge	2,975	2,960
Plymouth	3,046	3,033
FORD MOTOR CO.		
Ford	4,807	4,616
Lincoln	1,623	1,617
Mercury	2,749	2,751
GENERAL MOTORS		
Buick	2,945	2,950
Cadillac	1,615	1,615
Chevrolet	4,945	4,975
Oldsmobile	3,170	3,175
Pontiac	2,975	2,975
VOLKSWAGEN U.S.	880	878

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U.S. CAR OUTLETS

	Apr. 1, 1987	Jan. 1, 1987
American Motors-Renault	1,337	1,349
Chrysler Corp.	4,037	4,023
Ford Motor Co.	5,451	5,460
General Motors	9,630	9,680
Volkswagen U.S.	880	878
TOTALS	21,335	21,390
Minus Intercorporate Duals	976	985
NET OUTLETS	20,359	20,405

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All four of the U.S.-based manufacturers offer captive imports. Captives are foreign cars whose U.S. distribution is controlled by a U.S. maker. Volkswagen United States sells both U.S.-built and imported VWs. In addition, many domestic dealers sell an independent import, in some cases along with their captive line.

In the first quarter, General Motors was responsible for the downturn in dealerships with a decline of 50 establishments. Elsewhere, the domestic manufacturers were pretty stable.

Chrysler Motors reported a gain of 14 dealerships, and VW was up two. Ford Motor Co. was down nine, and American Motors-Renault lost 12 outlets during the quarter. A change in the number of intercorporate duals brought the overall slip to 46.

All figures in this article and in the accompanying tables indicate the net change in the dealer population, both for the individual corporations and car lines and for the domestic industry as a whole.

Chrysler's increase was its 16th in the last 18 quarters. Another quarter in that span resulted in no change, and only one showed a drop. During those 18 quarters — starting in October 1982 — Chrysler has added 408 dealers.

Volkswagen's upturn was its second quarterly advance in a row. VW's dealer total has gained or held steady in five of the last six quarters.

On the franchise side, the first quarter saw gains for each of the Chrysler Motors makes and for Lincoln and VW. The Chrysler increases were uniform — 15 for Dodge, 13 for Plymouth and 12 for Chrysler. Lincoln added six franchises, and VW added two.

Chevrolet had a decline of 30 franchises. Cadillac and Pontiac were unchanged during the period, and dips ranged from two to nine for Mercury, Buick, Oldsmobile, Renault, AMC and Ford.

Chrysler Motors' addition of 14 dealerships was its best first-quarter showing since 1984. Its total of 4,037 car outlets is its highest since mid-1980 — before the dawn of the Iacocca era.

Chrysler also has three dealerships that handle only Dodge trucks. They are not counted in the corporation's car-dealer total or in the Dodge car-franchise total.

Ford Motor's loss of nine locations was lighter than last year's first-quarter dip of 16.

Ford has 112 dealerships that sell only Ford heavy-duty trucks. They are excluded from the company's car-dealership count and from Ford Division's franchise total.

GM, with 9,630, has nearly half of the nation's domestic-car dealers. Its first-quarter dip of 50 was its heaviest for that period since 1983 (also down 50), but it amounted to just one-half of one percent of GM car-dealer total.

GM's corporate dealer count is 10,180, including GMC truck outlets that do not handle any of the corporations's car lines.

The AMC-Renault dealership total of 1,337 includes 1,213 that handle both makes. AMC has 723 duals with Big Three cars, and Renault is included in 92 percent of them.

The AMC-Renault-Jeep dealership total on April 1 was 1,459, including Jeep outlets that do not handle either of the company's car lines.

Volkswagen U.S. has an estimated 170 duals with Big Three cars and with AMC-Renault.

Looking back a year, the total of 20,359 domestic-car dealerships is down 289 from the 20,648 in operation on April 1, 1986. Chrysler added 32 outlets during the 12-month period, and VW was up three.

There were dips of 195 for GM, 83 for AMC-Renault and 50 for Ford Motor Co. A change of four in the number of intercorporate duals brought the decline for the industry to 289.

PRODUCTION

Car output moves up

By Kathy Barbaglia
AUTOMOTIVE NEWS STAFF REPORTER

Auto production in the United States remained at a low level last week as most assembly plants worked only four days because of a holiday.

Car output was targeted at 133,634 units last week. 4.76 percent more than the previous week's 127,561. The prior week's build also was trimmed by a holiday.

Last week's production was 19.57 percent below the year-ago week's 166,146.

Companies split last week's scheduled production as follows: General Motors, 51.27 percent; Ford Motor Co., 24.72 percent; Chrysler Motors, 12.95 percent; Honda of America Manufacturing Inc., 4.98 percent; New United Motor Manufacturing Inc., 2.24 percent; Nissan Motor Manufacturing Co. U.S.A., 2.19 percent; Volkswagen of America, 1.20 percent; and American Motors, 0.45 percent.

Volkswagen's plant in Westmoreland, Pa., is down this week (April 27) for inventory adjustment, affecting about 1,600 workers. The plant is expected to resume output on May 11.

GM reported that no Cadillac Cimarrons were built last week, and only 53 units are scheduled this week. A company spokesperson said the shutdown and reduction at GM's Janesville, Wis., plant are the result of high inventory. No date was given for Cimarron's return to full line speed.

GM's Leeds, Mo., plant is idle this week for inventory adjustment, affecting 2,000 workers. The plant is expected to resume operations May 11.

GM's Oklahoma City plant resumed production last week (April 20). The plant was idle for one week for inventory adjustment.

Saturday (April 25) overtime was slated for GM's No. 1 plant in Lansing, Mich.

Ford slated Saturday overtime at its Dearborn, Mich., plant.

All Ford car plants are scheduled for daily overtime this week.

Chrysler's Sterling Heights, Mich., plant was slated for Saturday overtime. That plant and the Newark, Del.; and St. Louis plants are scheduled for daily overtime this week.

Week's truck production dips 5%

Domestic truck production was scheduled at 63,943 units last week, 5.10 percent below the previous week's 67,378.

Each week included a holiday, although General Motors slated overtime at five plants last Saturday (April 25).

Last week's build was 13.00 percent below the year-ago week's 73,501.

GM slated Saturday overtime at the Baltimore; Detroit; Flint, Mich.; Lordstown, Ohio; and Pontiac, Mich. (medium-duty line) plants.

No Saturday overtime was scheduled at Ford Motor Co. truck plants.

Ford has slated daily overtime this week (April 27) at all of its truck plants.

Canada truck build is year's best

Canadian truckmakers last week scheduled their highest week's production so far this year.

The estimate was 19,112 trucks, 48.30 percent more than the previous week's 12,887. Plants worked only four days the previous week because of the Easter holiday.

Last week's scheduled truck output was 0.84 percent below the year-ago week's 19,273.

Auto production totaled 17,860 last week, 23.15 percent more than the holiday week's 14,503.

Last week's scheduled build was 29.75 percent below the year-ago week's 25,422.

CANADIAN CAR	Week Ended April 25, 1987	Week Ended April 26, 1986	Week Ended April 18, 1987	April to Date	Jan. 1 to April 25, 1986	Jan. 1 to April 25, 1987
AMERICAN MOTORS	100	115	86	379	2,013	2,211
FORD MOTOR	11,665	11,404	9,663	39,221	184,651	170,684
GENERAL MOTORS	5,600	13,676	4,406	11,375	185,667	92,280
HONDA	270	0	168	779	0	662
VOLVO	225	225	180	765	3,571	3,330
Total Cars, Canada	17,860	25,422	14,503	52,518	375,902	269,147

U.S. TRUCK☆	Week Ended April 25, 1987	Week Ended April 26, 1986	Week Ended April 18, 1987	April to Date	Jan. 1 to April 26, 1986	Jan. 1 to April 25, 1987
CHEVROLET	18,066	24,392	21,142	74,790	406,901	357,890
DODGE	3,600	1,734	4,667	17,312	5,094	77,871
FORD	25,786	30,048	25,593	102,056	483,000	485,848
GMC	6,886	7,306	6,751	26,439	121,882	117,829
NAVISTAR	1,600	1,606	1,344	5,556	24,900	23,996
JEEP	3,525	2,943	3,495	14,122	66,691	70,029
NISSAN	1,730	3,340	1,436	5,930	30,467	26,425
AM GENERAL*	450	50	450	1,350	822	1,950
MISCELLANEOUS*	2,300	2,000	2,300	9,260	37,000	34,500
Total Trucks, U.S.	63,943	73,501	67,378	255,926	1,178,737	1,197,340

CANADIAN TRUCK	Week Ended April 25, 1987	Week Ended April 26, 1986	Week Ended April 18, 1987	April to Date	Jan. 1 to April 26, 1986	Jan. 1 to April 25, 1987
AMERICAN MOTORS	750	855	812	2,481	5,768	9,974
CHRYSLER	8,494	8,315	5,887	28,162	145,108	133,888
FORD	3,648	3,648	2,676	11,517	58,193	50,015
GENERAL MOTORS	6,015	6,213	3,540	18,066	100,262	61,972
NAVISTAR	205	242	162	691	3,244	3,014
Total Trucks, Canada	19,112	19,273	12,887	60,916	312,573	258,864
N. American Trucks	83,055	92,774	80,265	316,844	1,491,310	1,456,204

— Includes sedans not production. *—Estimated
Also includes commercial only. AM General includes government-destined vehicles
Miscellaneous includes estimates for Mack, Volvo-White, Kenworth, Peterbilt, Freightliner, Mercedes-Benz, etc.
Weekly estimates may contain some of two or three weeks' scheduling

U.S. CAR	Week Ended April 25, 1987	Week Ended April 26, 1986	Week Ended April 18, 1987	April to Date	Jan. 1 to April 26, 1986	Jan. 1 to April 25, 1987
AMERICAN MOTORS	600	1,980	680	2,449	16,563	10,627
Renault Total	600	1,980	680	2,449	16,563	10,627
Alliance	600	1,724	680	2,449	14,421	10,627
Encore	0	256	0	0	2,142	0
CHRYSLER MOTORS	17,300	25,750	16,998	73,867	474,363	377,896
Plymouth Total	4,300	6,800	4,201	18,404	132,866	128,132
Horizon	0	3,774	0	0	59,125	32,987
Sundance	1,700	0	1,544	7,367	0	35,535
Reliant	1,600	3,450	1,792	7,371	58,181	40,377
Caravelle	700	96	777	3,276	10,337	18,662
Gran Fury	100	453	88	391	5,223	599
Chrysler Total	7,300	7,316	7,156	36,150	168,291	110,896
Laser	0	905	0	0	18,512	0
LeBaron K	1,100	2,351	1,227	5,523	40,268	28,905
LeBaron J	3,000	0	2,480	10,035	0	31,186
LeBaron GTS	700	0	703	3,199	28,930	13,516
New Yorker/E-Class	1,400	1,517	1,586	6,337	33,320	28,789
Fifth Avenue	1,100	2,545	1,132	4,543	47,261	8,918
Dodge Total	5,700	9,772	5,639	25,113	175,196	136,659
Daytona	1,100	1,275	1,227	4,928	17,212	15,490
Omni	0	3,657	0	0	50,864	28,365
Shadow	1,900	0	1,671	7,986	0	33,230
Aries	1,500	2,237	1,499	6,680	42,900	35,525
Dodge 600	700	1,744	774	3,249	28,950	16,506
Lancer	400	0	311	1,677	24,637	8,850
Diplomat	100	849	157	592	13,613	572
FORD MOTOR	33,033	39,658	34,398	136,936	801,882	645,005
Ford Division	23,694	27,270	24,865	98,554	410,593	449,292
Escort	5,710	6,292	6,712	25,584	133,305	117,109
Mustang	4,361	4,214	3,629	15,661	69,213	70,759
Tempo	3,232	4,113	3,244	13,261	69,076	82,805
Taurus	7,193	7,035	7,964	30,799	85,809	148,798
Thunderbird	3,198	3,616	3,316	13,230	52,330	49,821
L-M Division	9,339	12,388	9,531	38,383	191,299	196,713
Mercury Total	6,059	8,998	6,251	25,283	129,689	139,079
Lynx	510	1,159	602	2,452	21,632	17,494
Capri	0	386	0	0	5,827	0
Topaz	1,122	1,317	1,185	4,354	21,503	19,139
Cougar	2,170	2,432	2,176	8,959	39,631	54,752
Sable	2,217	3,405	2,308	9,499	41,096	46,694
Lincoln Total	3,280	3,690	3,280	13,120	61,610	58,634
Continental	328	413	328	1,316	7,000	5,870
Lincoln	2,462	2,766	2,461	9,844	46,217	43,975
Mark VII	490	511	491	1,961	8,393	8,789
GENERAL MOTORS	69,531	89,628	69,449	288,388	1,508,525	1,229,839
Buick Total	11,539	18,645	9,407	38,288	246,039	197,749
Skyhawk	836	1,787	446	2,371	29,325	13,782
Century	4,044	5,838	1,312	11,414	82,600	62,127
Regal	575	1,466	906	2,366	15,896	14,042
Somerset/Skylark	1,560	2,433	1,536	4,900	33,077	25,813
LeSabre (fwd)	1,934	2,730	2,811	10,434	35,137	37,009
LeSabre/Electra (rwd)	240	276	249	884	4,530	4,350
Electra (fwd)	2,080	1,535	1,994	5,493	38,253	34,369
Riviera	190	580	183	506	7,221	6,077
Cadillac Total	5,237	7,303	3,771	10,229	103,459	103,776
Cimarron	53	634	0	204	8,701	5,668
Allante	124	0	67	355	0	935
Brougham (rwd)	960	1,994	668	3,587	27,801	26,667
DeVille (fwd)	3,200	3,585	2,458	12,089	53,831	58,982
Eldorado	474	556	293	1,036	7,273	5,401
Seville	426	534	287	958	5,853	8,121
Chevrolet Total	23,300	28,385	25,167	102,588	480,255	456,029
Chevette	0	2,400	0	0	40,902	0
Camaro	2,600	5,388	2,611	10,320	72,189	33,624
Cavalier	6,000	8,767	6,825	28,739	143,181	117,579
Celebrity	2,500	5,287	2,205	17,441	101,728	116,344
Corsica/Beretta	6,500	0	7,195	23,742	0	94,917
Monte Carlo	1,100	2,140	1,436	5,070	39,869	22,029
Chevrolet	4,000	3,772	4,383	17,112	83,537	72,816
Corvette	600	631	512	2,142	8,849	9,721
Oldsmobile Total	13,906	20,950	11,580	46,807	367,050	232,313
Firenza	520	716	398	1,829	18,173	3,396
Calais	2,280	2,277	2,389	7,584	46,322	36,394
Cutlass Ciera	2,986	4,395	661	9,410	93,839	58,316
Cutlass Supreme	2,619	2,637	2,576	8,021	65,239	21,454
88 (fwd)	3,703	8,343	3,260	12,983	107,289	70,336
88 (rwd)	380	353	335	1,434	7,805	6,109
Olds 98	959	1,799	1,393	4,546	43,269	27,395
Toronado	457	428	308	989	5,334	5,313
Pontiac Total	14,549	16,537	13,514	52,518	279,722	237,972
Acadian*	0	609	0	0	4,899	0
Fiero	957	0	853	1,810	27,020	11,805
1000	0	968	0	0	9,122	0
Firebird	1,708	2,895	1,743	6,756	38,607	26,365
2000 Sunbird	1,956	3,035	1,935	7,978	47,344	38,685
Grand Am	5,036	4,819	4,159	19,072	72,981	81,849
6000	2,112	2,716	2,058	5,701	51,182	27,553
Bonneville	2,520	0	2,504	9,979	0	47,390
Safari/Parisienne	260	1,405	262	1,221	28,567	4,324
HONDA	6,650	3,876	5,290	22,821	60,176	105,738
Civic	1,620	0	1,331	5,531	0	33,929
Accord	5,030	3,876	3,959	17,290	60,176	71,809
NISSAN	2,920	0	2,407	9,992	21,517	44,594
NUMMI	3,000	3,070	2,772	12,333	58,708	60,667
Corolla	600	0	565	2,488	0	12,410
Nova	2,400	3,070	2,207	9,841	58,708	48,257
VOLKSWAGEN	1,600	1,991	1,829	6,368	28,619	25,947
Golf/GTI	1,350	1,991	1,379	5,468	28,619	21,497
Jetta	250	0	250	900	0	4,450
Total Cars, U.S.	133,634	166,146	127,561	522,954	2,708,353	2,500,243
Total Cars, Canada	17,860	25,422	14,503	52,518	375,902	269,147
N. American Cars	151,494	191,568	142,064	575,472	3,144,255	2,769,390
N. American Trucks	83,055	92,774	80,265	316,844	1,491,310	1,456,204
North American Cars and Trucks	234,549	284,342	222,329	892,316	4,635,565	4,225,594

— All Acadians are built for sale in Canada.
Weekly estimates may contain some of two or three weeks' scheduling

High stocks may idle GM 'E' plant for 10 weeks

By Edward Lapham
AUTOMOTIVE NEWS STAFF REPORTER

Swollen dealer stocks and sluggish sales of General Motors E-body cars have prompted GM to plan a 10-week model changeover at the Detroit-Hamtramck assembly plant.

The E-cars are the Oldsmobile Toronado, Buick Riviera and Cadillac Eldorado.

The K-body Cadillac Seville line is likely to be down for the entire E-body changeover, although the V-body Cadillac Allante line could have less downtime.

A week to two weeks is the normal changeover period for plants building cars that do not have major model-year-to-model-year changes. Although the 1989 Eldorado will get more than just a facelift, the extended changeover period is primarily due to sluggish sales.

In addition, a source at the plant said Detroit-Hamtramck officials, apparently acting on their own initiative, already are considering a plan that would extend the year-end holiday three extra weeks, until Jan. 25, in anticipation of the need to adjust 1988 model output at mid-year.

Those tentative plant-level plans do not seem to take into consideration a possible strike by the UAW or changes in the production rate — if any — at the start-up of the 1988 model year.

A spokesman for GM's Buick-Oldsmobile-Cadillac Group, which operates the plant, said the corporate scheduling committee has not finalized model changeover schedules and is not likely to do so until about June 1.

The scheduling committee, which meets at least once a month, is responsible for approving production schedules. The committee acts on recommendations that originate with the divisions and are forwarded to the groups.

Normally, the scheduling committee works only 60 or 90 days ahead, the B-O-C spokesman said, fine-tuning quarterly schedules on a monthly basis.

Detroit-Hamtramck is the sole source of Eldorado, Riviera, Toronado, Seville and Allante.

On April 1, there were some 21,400 unsold K- and E-cars, equal to a 97-day supply of Toronados, a 69-day supply of Rivieras, a 67-day supply of Sevilles and a 112-day supply of Eldorados.

Since the beginning of the 1987 model year, the Detroit-Hamtramck plant has been closed completely or partially just two weeks for inventory adjustment.

OBITUARIES

Irving Woodin

MONTICELLO, N.Y. — Irving Woodin, 76, former owner and president of Queensbury Motors, died here April 14.

John A. Rooney

BOSTON — John A. Rooney, 79, longtime automobile editor of the old Boston Herald-Traveler, died April 14.

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April 29, 1987

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1987 MARKET DATA BOOK

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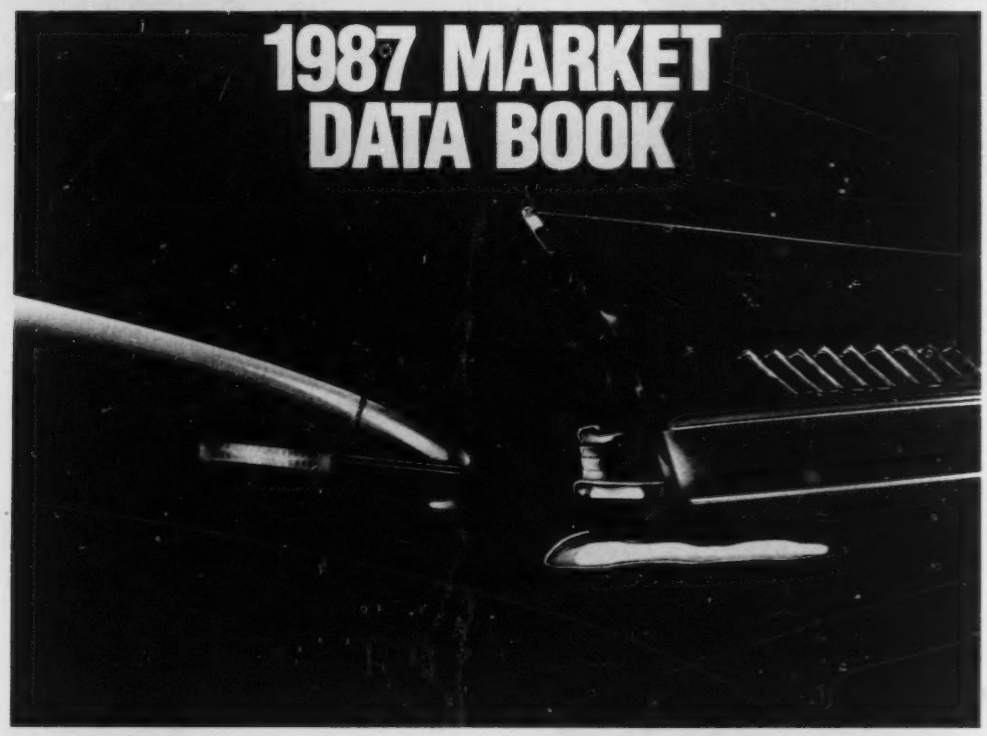

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PRODUCTION

For the seventh straight year, Japan produced more vehicles than the United States. Japan turned out 12,259,819 units in 1986 versus 12,271,095 in 1985, a drop of 0.09 percent.

The United States produced 11,372,865 vehicles in 1986, compared to 11,671,475 in 1985.

South Korea took honors in 1986 for the biggest percentage gain in production. That nation built 601,546 vehicles, a 59.07-percent increase over 1985's 378,162.

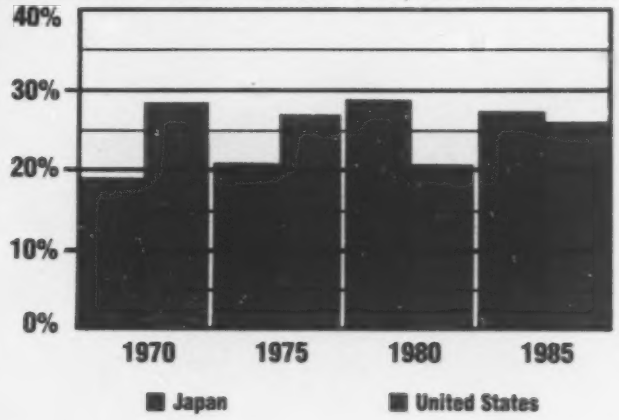
Other big gainers were: Brazil, up 9.30 percent to 1,056,507 in 1986 compared to 966,625 in 1985; and Spain, up 8.11 percent to 1,532,623 in 1986, compared to 1,417,604 in 1985.

West Germany also increased output in 1986, turning out 4,596,963 vehicles, 3.40 percent higher than 1985's 4,445,920.

Italy increased production by 16.41 percent in 1986, making 1,831,089 units compared to 1,572,907 in 1985.

Mexico had the biggest percentage drop in 1986, producing 272,168 units, a 31.65-percent drop from 398,192 in 1985. ■

PERCENT OF WORLD PRODUCTION, JAPAN vs. U.S.



WORLD VEHICLE PRODUCTION AND ASSEMBLY

	North America	Europe	Asia	South America
1985	14,006,178	15,901,217	12,880,388	1,104,300
1984	13,145,741	15,215,560	11,758,738	977,419
1983	11,015,273	15,682,826	11,486,316	1,055,457
1982	8,734,684	14,787,194	11,047,858	982,709
1981	9,962,814	14,412,899	11,462,754	952,199
1980	9,874,206	15,412,225	11,279,345	1,454,124
1979	13,556,095	16,269,079	9,941,286	1,384,210
1978	15,101,822	16,397,613	9,524,417	1,256,884
1977	14,759,040	15,873,698	8,688,887	1,175,823
1976	13,462,687	15,206,985	7,974,787	1,192,417
1975	10,771,197	13,472,708	7,052,131	1,180,931
1974	11,946,671	14,408,058	6,670,019	1,180,931
1973	14,541,846	15,607,461	7,206,988	1,040,749

Definitions: North America — Canada, Mexico, U.S.; Europe — Western Europe and Eastern Bloc including U.S.S.R.; Asia — India, Japan, Korea; South America — Argentina, Brazil. Totals will not match with other production tables because of CKD kits.

SOURCE: WWMA

ANNUAL WORLD VEHICLE PRODUCTION SINCE WORLD WAR II

Year	Australia	Belgium	Brazil	Canada	France	Italy	Japan	Korea	Mexico	Spain	Sweden	U.K.	U.S.	USSR	W. Germany	World Total
1986	362,247	N.A.	1,056,507	1,863,836	3,194,615	1,831,089	12,259,817	601,546	272,168	1,532,623	487,152	1,247,647	11,372,865	N.A.	4,596,963	N.A.
1985	411,332	266,682	966,625	1,936,511	3,016,106	1,572,907	12,271,095	378,162	398,192	1,417,604	461,072	1,311,256	11,671,475	2,200,000	4,445,920	44,279,111
1984	399,084	249,461	864,663	1,877,966	3,062,152	1,601,177	11,392,711	265,361	343,698	1,308,769	431,852	1,133,731	10,924,077	2,209,400	4,045,462	41,739,049
1983	337,075	285,478	896,462	1,523,324	3,335,860	1,575,151	11,055,711	221,019	285,485	1,288,721	414,522	1,289,111	9,512,781	2,190,000	4,154,439	39,775,231
1982	408,570	278,014	860 593	1,270,012	3,148,807	1,453,043	10,731,794	163,484	472,637	1,069,507	349,066	1,156,477	6,876,034	2,172,700	4,062,655	36,112,594
1981	391,614	237,456	779,836	1,198,416	3,019,370	1,433,743	11,179,962	133,905	597,118	987,474	313,679	1,184,205	7,981,167	2,197,500	3,897,007	37,730,055
1980	364,109	259,966	1,165,207	1,373,054	3,378,433	1,611,856	11,042,884	123,135	490,006	1,181,659	298,400	1,312,904	8,010,374	2,199,200	3,878,553	38,513,635
1979	461,468	314,997	1,127,966	1,602,369	3,613,458	1,632,289	9,635,546	204,447	444,426	1,122,918	354,820	1,478,512	11,391,867	2,173,200	4,249,725	41,518,599
1978	384,966	303,260	1,062,197	1,805,737	3,507,930	1,656,115	9,269,153	156,418	384,128	1,143,831	305,534	1,607,467	12,830,046	2,150,984	4,186,364	42,299,436
1977	452,592	336,382	919,242	1,698,904	3,507,881	1,583,917	8,514,522	83,000	280,813	1,129,700	286,091	1,714,020	12,727,243	2,088,399	4,104,216	40,946,772
1976	456,216	326,978	985,469	1,640,912	3,402,715	1,596,677	7,841,447	48,292	324,979	866,240	367,780	1,705,506	11,484,169	2,024,660	3,868,089	38,341,012
1975	456,167	222,176	929,805	1,446,330	2,861,305	1,458,629	6,941,591	36,264	360,678	814,164	366,753	1,648,399	8,991,091	1,964,056	3,186,208	32,998,363
1974	489,339	183,128	858,479	1,481,595	3,462,847	1,772,515	6,551,840	30,290	350,755	837,414	368,359	1,936,685	10,052,265	1,846,000	3,099,777	34,732,816
1973	454,190	298,957	729,135	1,587,500	3,569,179	1,957,994	7,082,757	26,314	285,513	822,020	378,042	2,163,941	12,674,613	1,602,000	3,949,065	39,917,733
1972	466,197	271,453	608,985	1,459,695	3,328,320	1,839,793	6,294,438	18,648	229,766	695,217	350,989	2,329,430	11,299,236	1,379,000	3,815,982	35,577,783
1971	470,122	295,764	516,038	1,372,328	3,010,294	1,817,019	5,810,774	23,002	210,840	532,358	317,295	2,198,146	10,655,574	1,142,700	3,982,722	33,423,579
1970	473,790	272,433	416,047	1,157,476	2,750,086	1,854,252	5,289,157	28,819	192,841	536,026	310,887	2,098,498	8,266,718	916,118	3,842,247	29,403,479
1969	451,917	302,549	349,519	1,350,708	2,459,072	1,595,951	4,674,932	30,994	165,164	454,571	271,440	2,182,793	10,181,263	844,300	3,604,567	29,809,527
1968	418,307	172,906	278,473	1,169,498	2,075,617	1,663,648	4,085,826	17,657	143,478	393,433	244,786	2,225,122	10,797,851	700,900	3,106,958	28,356,002
1967	366,547	183,087	225,418	939,635	2,009,672	1,542,669	3,146,486	6,604	126,365	361,637	214,650	1,937,199	8,996,490	728,800	2,462,319	24,022,706
1966	343,929	195,219	224,574	896,119	2,024,552	1,365,898	2,286,399	3,430	113,807	340,418	199,910	2,042,354	10,363,418	675,300	1,050,708	24,851,947
1965	407,569	166,594	185,187	852,274	1,641,696	1,175,548	1,875,614	141	96,654	228,935	205,717	2,177,261	11,118,020	634,312	2,976,477	24,266,799
1964	411,750	2,070	183,707	668,508	1,615,896	1,090,078	1,702,475	249	90,752	178,128	184,184	2,332,376	9,304,403	603,100	2,909,657	21,727,002
1963	374,058	1,200	174,191	631,356	1,736,977	1,180,536	1,283,531	1,254	69,135	131,988	167,850	2,011,720	9,108,305	587,012	2,667,896	20,373,249
1962	329,629	1,043	191,194	505,187	1,536,133	946,793	990,706	1,777	66,637	100,163	151,568	1,674,530	8,191,414	577,500	2,356,612	17,999,263
1961	231,651	800	145,584	386,923	1,244,223	759,140	813,879	—	62,563	75,000	131,755	1,464,134	6,650,282	555,330	2,147,825	15,228,245
1960	326,250	256	133,041	397,739	1,369,210	644,633	481,551	—	49,807	58,209	128,527	1,810700	7,901,502	523,591	2,055,149	16,488,340
1959	263,592	343	96,114	367,939	1,283,159	500,784	262,814	—	51,118	56,800	112,394	1,560,427	6,723,204	494,994	1,718,556	13,916,125
1958	241,324	382	60,983	356,418	1,127,549	403,560	188,303	—	38,955	31,050	91,179	1,365,407	5,114,807	511,074	1,495,256	11,289,036
1957	213,620	320	30,542	413,577	927,956	351,815	181,977	—	41,106	30,436	71,654	1,149,095	7,220,431	495,408	1,212,232	12,399,816
1956	204,176	383	—	471,350	827,079	315,802	111,066	—	39,387	4,500	57,274	1,004,544	6,905,458	464,632	1,075,619	11,675,283
1955	218,004	1,625	—	452,114	725,061	268,766	68,932	—	32,275	3,972	50,299	1,237,068	9,204,049	445,268	908,742	13,628,103
1954	200,605	3,620	—	352,109	600,040	216,715	70,073	—	33,380	620	44,735	1,037,879	6,536,729	403,873	680,597	10,348,996
1953	159,307	1,786	—	486,049	497,348	174,320	49,778	—	35,709	600	29,427	834,275	7,349,123	354,175	490,681	10,436,544
1952	116,293	550	—	434,102	498,962	138,446	38,966	—	46,987	400	21,233	689,658	5,561,796	307,936	428,383	8,324,023
1951	129,259	N.A.	—	415,420	445,655	145,533	38,490	—	46,081	308	22,950	733,883	6,757,014	288,683	374,151	9,352,635
1950	126,721	248	—	387,726	357,552	127,847	31,597	—	21,575	253	17,553	783,677	8,005,859	362,895	306,064	10,577,426
1949	—	200	—	290,664	285,641	86,054	28,700	—	—	486	11,069	628,196	6,243,834	275,992	163,583	8,044,198
1948	—	1,058	—	261,009	198,372	59,953	20,367	—	—	760	9,497	507,608	5,220,755	197,056	61,294	6,564,946
1947	—	—	—	242,107	137,383	43,736	11,320	—	—	—	9,287	441,284	4,795,587	132,968	23,343	5,853,636
1946	—	—	—	170,695	96,062	28,983	14,921	—	—	—	7,336	359,634	3,100,820	102,171	30,671	3,913,410

NOTE: Totals may not add because of double counting of CKD kits and unavailable production numbers in other countries. 1986 World Total was not available as of press time.

SOURCES: Automotive News, WWMA, AID Ltd., JAMA